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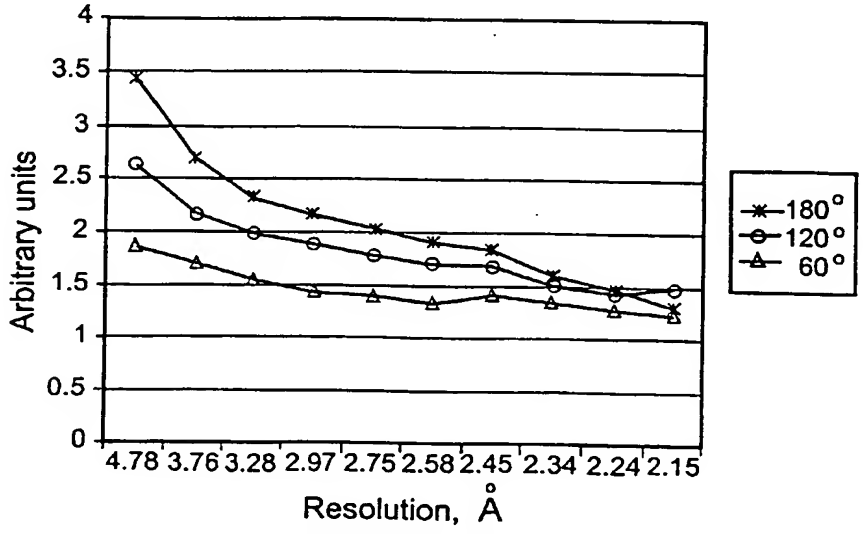
(54) Title: MONITORING SIGNAL-TO-NOISE RATIO IN X-RAY DIFFRACTION DATA



(57) Abstract: The present invention relates to methods of diffractometrically determining the structures of materials by characterizing their electron density distributions. More particularly, the present invention relates to methods of collecting, processing and interpreting X-ray diffraction data, which allow real time evaluation of the signal-to-noise ratio in crystal diffraction experiments. The present methods related to the derivation of statistical indices for monitoring and evaluating signal-to-noise ratios in diffraction experiments. In addition, the present invention provides methods of determining the electron density distributions of crystals using anomalous scattering signals corrected for noise. Further, the present invention provides methods of increasing the signal-to-noise ratios in X-ray diffraction data.

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